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Typification of *Lecanora expallens* and *L. expallens* var. *conizaea* (*Lecanorales*, *Ascomycota*)

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Abstract — Lectotypes are selected for *Lecanora expallens* and *L. expallens* var. *conizaea* from the collection in H-ACH. Characteristic of the species based on the type collection is provided.

Key words — *Lecanoraceae,* lichenized fungi, lichen metabolites

Introduction

Lecanora expallens is a well known, common and widely distributed sorediate lichen species, reported from many regions of the world (e.g. Tønsberg 1992, Pišút et al. 1996, Motiejūnaitė 1999, Diederich & Sérusiaux 2000, Śliwa & Wetmore 2000, Hafellner & Türk 2001, Coppins 2002, Fałtynowicz 2003, Kurokawa 2003, Aptroot et al. 2004, Ryan et al. 2004, Santesson et al. 2004, Galloway 2007). It was included in the taxonomical revision of the *Lecanora varia* group in North America (Śliwa & Wetmore 2000) and in the recent lichen flora of the Greater Sonoran Desert Region (Ryan et al. 2004) as well. The species was also discussed by Printzen (2001) in relation to *L. confusa* Almb., a taxon which is supposed to be an esorediate counterpart of *L. expallens* and considered by some authors as doubtfully distinct from the latter (see Śliwa & Wetmore 2000).

During my research on sorediate crustose lichens, several sterile and fertile specimens of *L. expallens* were investigated. After the examination of all available literature it became clear that although *L. expallens* was a common subject of several studies, no type specimen of the species has ever been cited and actually the identity of the species has remained obscure. That prompted the examination of the type collections of *L. expallens*, including *L. expallens* var. *conizaea*. The aim of this paper is to present the typification of *L. expallens* and *L. expallens* var. *conizaea*.

Material & methods

Type material from BM-ACH and H-ACH was studied, with additional specimens from BM, KRAM and UGDA examined for comparison. Lichen substances were studied by thin-layer chromatography (TLC) in solvents A and C according to the methods of Culberson & Kristinsson (1970) and Orange et al. (2001).

Taxonomy

Lecanora expallens Ach., Lichenogr. Univer.: 374. 1810.

Type: Gallia, (on wood) Du Four 99 (H-ACH 1267, upper left hand specimen – **lectotype designated here**).

= *Lecanora expallens* var. *conizaea* Ach., Lichenogr. Univer.: 374. 1810.

≡ *Lecanora conizaea* (Ach.) Nyl. ex Cromb., J. Linn. Soc., Bot. 15: 440. 1876.

Type: Anglia (on bark of pine) Turner (H-ACH 1267, right hand specimen – **lectotype designated here**).

Thallus crustose, grey green, episubstratal, entirely sorediate, without any delimited soralia (marginal part not preserved in the collected specimen); soredia farinose; apothecia lecanorine, sessile, flat to slightly convex, numerous; disc brown, delicately pruinose, pruina farinose; thalline margin well developed, persistent, raised above the disc, sorediate, concolorous with the thallus, cortex not seen; amphithecium with two different types of crystals, one present in the outer part, yellowish in polarized light, K soluble and N insoluble, the other in the inner part, more whitish in polarized light, K insoluble and N soluble; parathecium well visible, up to 40 µm wide, with substance (amorphic?) yellow in polarized light, K soluble, N insoluble; epithecium brownish, granulose, granules coarse, yellow in polarized light, K soluble and N mostly insoluble (or slowly soluble); paraphyses simple, up to 2 µm wide, not capitate; ascospores 8 in ascus, non-septate, hyaline, narrowly (9–14 × 4–5 µm) or broadly (11 × 6–6.5 µm) ellipsoid.

Chemistry — Usnic acid (+), zeorin (+), thiophanic acid (+), xanthone similar to arthothelin (+), 'expallens unknown' sensu Tønsberg (1992) and trace of unidentified xanthone (±, both only in the lectotype of *L. expallens* var. *conizaea*) were detected in the studied type specimens. That agrees with the chemistry reported by Tønsberg (1992), Śliwa & Wetmore (2000), Printzen (2001) and Ryan et al. (2004).

Comments — According to Kärnefelt & Thell (2007), the main part of Acharius collection is placed at the University of Helsinki as H-ACH. Less comprehensive (but still large) collections are also present in the Museum of Evolution in Uppsala (UPS-ACH), the Natural History Museum in Stockholm (S), and the Natural History Museum, London (BM-ACH) (see also Vondrák & Vitikainen 2008). Specimens of *L. expallens* were found only in H and BM.

The collection in H-ACH contains five specimens, all associated at least with the country name and some also with further information. Two of them

correspond to the protologue in Acharius (1810), therefore the collection in H-ACH is suitable for the typification. In BM-Ach the specimen consists of several pieces of wood covered with thallus of *L. expallens*, but no details of locality and collector are provided.

Acharius (1810) cited 'Habitat ad truncos Salicinos Galliae. *Du Four*. *Persoon*.' Both those collections are present in H-ACH; however, only Du Four's specimen belongs to *L. expallens* in the currently accepted sense, and that one is selected in this paper as a lectotype to preserve the current concept of the species. The second specimen represents *Pertusaria coccodes* (Ach.) Nyl. (norstictic and connorstictic acids were detected by TLC). Both specimens have also been examined and annotated by O. Almborn in 1963, but his results have never been published (O. Vitikainen, pers. information).

Acharius (1810) cited three specimens of *L. expallens* var. *conizaea*: 'Habitat in cortice Pini ac ligno Quercus vetusto Angliae, *Turner*; Helvetiae, *Schleicher*.' In H-ACH only one specimen annotated as *L. expallens* var. *conizaea* exists; it is on piece of bark of pine from 'Anglia' and is here selected as lectotype. This name (as *L. conizaea*) was often misapplied for *L. conizaeoides* Nyl. ex Cromb. and *L. strobilina* (Spreng.) Kieff. (Laundon 1976, 2003). However, as the type corresponds morphologically and chemically with the lectotype of *L. expallens, L. expallens* var. *conizaea* is confirmed as a synonym of *L. expallens*, which was already mentioned by Laundon (2003).

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